

USSR

KOLYANO, YU. M., SEMERAK, M. M., Physicomechanical Institute, Academy of Sciences UkrSSR, L'vov UDC 539.32:536.244

"Dynamic Problem in Thermoviscoelasticity for a Semi-Infinite Plate Considering the Rate of Heat Propagation"

Kiev, Problemy prochnosti, No. 8, Aug 71, pp 27-29

Abstract: An isotropic viscoelastic semi-infinite plate free of any external load is discussed under a situation where the side surfaces of the plate undergo heat exchange with the external medium in accordance with Newton's law. At time zero the boundary value of the plate temperature changes by a certain value and subsequently remains constant. The non-steady-state temperature field in the plate is obtained using a Laplace transformation and the heat conductivity equation of the hydrobolic type for determining the generalized plane temperature field. Dynamic temperature stresses caused by the temperature field are determined and the effect of a finite rate of heat propagation on the distribution of dynamic temperature stresses in a semi-infinite plate made of aluminum is determined on the basis of the analysis. Calculations show that consideration of the viscoelastic properties of the plate leads to a decrease in the maximum

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KOLYANO, YU. M., SEMERAK, M. M., Problemy prochnosti, No. 8, Aug 71, pp 27-29
dynamic temperature stresses calculated considering and without considering the
finite rate of heat propagation.

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UDC 620.1+621.9.038

VERESHCHAGIN, L. F., Academician, SEMERCHAN, A. A., MODENOV, V. P., BOCHAROVA, T. T., DMITRIYEV, M. YE., Institute of High-Pressure Physics of the Academy of Sciences USSR, Moscow

"Synthetic Diamond -- A Material for High-Pressure Chambers of the Order of a Megabar"

Moscow, Doklady Akademii Nauk SSSR, Vol. 195, No. 3, 21 Nov 70, pp 593-594

Abstract: The problem of obtaining pressures of 1 megabar and above in high-pressure chambers can be solved, in the opinion of the authors, by using composition materials based on synthetic microcrystalline diamonds. It is noted that pressures that can be achieved in high-pressure equipment depend not only on the construction of the equipment but also primarily on the physicomaterial properties of materials used to make the essential parts of the equipment. Tungsten carbide is known to become so plastic after reaching a pressure, in the central part of the equipment of the order of 400 kbar that a further increase in load does not lead to an appreciable rise in pressure inside the chamber. The example given for the reason for interest in achieving pressures of the order of several megabars is the theoretical calculations

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VERESHCHAGIN, L. F., et al, Doklady Akademii Nauk SSSR, Vol. 195, No. 3, 21 Nov 70, pp 593-594

of Schneider [Helv. Phys. Acta, 42, Fasc. 7/8, 957(1969)] who showed that it is possible to obtain metallic hydrogen at a pressure of the order of 2 megabars which probably has the properties of a superconductor with a high critical temperature. Samples of the materials were produced in a high pressure and temperature device of large capacity. Pressure was necessary in this case not only to reduce the graphitization of the diamond grain under heating but also to produce a sufficiently dense diamond-containing briquet. A metallographic study of the structure showed a predominance of diamond crystals, while the binding was the smaller portion of the volume of the material. The diamond grains have multiple contacts and apparently form a three-dimensional framework, as distinct from existing abrasive compositions in which diamond crystals are isolated from one another by the binder. The hardness of samples with a grain size of 2-3 μ was on the average 97 HRA. The elastic modulus as determined by an ultrasonic method on samples of size 12 x 8 mm with a grain size of 10-15 μ was $\sim 60,000$ kg/mm². It is concluded that exceptional hardness exceeding the hardness of known metallo- and mineral-ceramic solid alloys, in combination with a sufficiently high elastic modulus-can be obtained in diamond compositions with a high concentration of diamond and a minimum concentration of binder made by the application of high pressures.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--HIGH PRESSURE SCALE -U-
AUTHOR--(04)-VERESHCHANGIN, L.F., SEMERCHAN, A.A., KUZIN, N.N., SADKOV,
YU.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 557-60
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--HIGH PRESSURE EFFECT, BISMUTH ALLOY, LEAD ALLOY, IRON ALLOY,
COBALT CONTAINING ALLOY, ELECTRIC RESISTANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0565 STEP NO--UR/0020/70/191/003/0557/0560
CIRC ACCESSION NO--AT0126312
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0126312

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE DEPENDENCE OF THE ELEC. RESISTANCE ON PRESSURE, P, OF BI AND PB, BI AND FE PLUS 5PERCENT CO, AND PB AND FE PLUS 5PERCENT CO WAS DETD. P FOR THE TRANSITION OF FE PLUS 5PERCENT CO ON THE 1968 SCALE WAS 145 PLUS OR MINUS 5, ON THE SCALE OF LOREE, ET AL. (1966) IT WAS 140, WHEREAS ON THE BUNDY SCALE (1967) IT WAS 165 KILOBARS.

UNCLASSIFIED

USSR

UDC: 681.326.3

ADZHEMYAN, V. L., GASPARYAN, L. Kh., KHACHATRYAN, G. S., SEMERDZHYAN, M. A.
"A Microprogram Control Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 9, Mar 72, Author's Certificate No 331387, Division G, filed 2 Sep 70,
published 7 Mar 72, p 152

Translation: This Author's Certificate introduces a microprogram control device which contains a memory unit, registers, decoders, a cadence signal generator, and logic elements. As a distinguishing feature of the patent, the speed and structural flexibility of the device are increased by including an additional digital place in each field of the information register of the memory unit. The output of each of these digital places is connected respectively to the input of the first AND circuit, through a NOT gate to the input of the second AND circuit, and through the decoder for the given field to the input of the third AND circuit. The second input of the third AND circuit is connected to the output of a circuit for isolating even and odd signals. The inputs of the first and second AND circuits are connected through delay circuits for the given digital place to the reset and set terminals of this additional digital place respectively.

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USSR

UDC 577.391:575.1:633.11

SEMERDZHIAN, S. P., NOR-AREVYAN, N. G., SAAKYAN, A. G., and GRIGORYAN, Z. D., Scientific Research Institute of Agriculture, Armenian SSR

"The Relationship Between the Radiation Sensitivity of Wheat Seedlings and the Content of Sulfhydryl Compounds in Meristem Cells"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 24, No 3, Mar 71, pp 106-107

Abstract: Two lines of the same variety of wheat (Bezostaya 1) were selected, one with rapidly growing and the other with slowly growing seedling stalks. Two-day old seedlings of both lines, which were genetically identical, were irradiated with gamma-rays in a dose of 300 r. The content of SH groups per 100 mg of stalk meristem cells of seedlings not irradiated was 1.007 and 1,315 micromole for the rapid-growing and the slow-growing line, respectively. Upon irradiation, the growth of stems of the rapid-growing line was depressed to a greater extent than that of stems of the slow-growing line. The number of cells with chromosome aberrations determined in anaphase after irradiation was greater in the stalk meristem of the rapid-growing line than that of the slow-growing line. The results showed that there was a definite correlation between the radiation sensitivity of the seedlings and the content of SH groups in their meristem cells.

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AA0040691

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Soviet Inventions Illustrated, Section I Chemical, Derwent,
1-40

241565 GIMBLE MOUNTED ELECTRODE for welding small objects where to ensure parallel positioning of the electrode faces with respect to the work, the lower electrode of the welding machine was mounted in a gimble formed by a shaft 2 frame 9 and fork 7. The gimble sensitivity was increased by using ball-bearings and keeping the axes of the bearings in one plane.

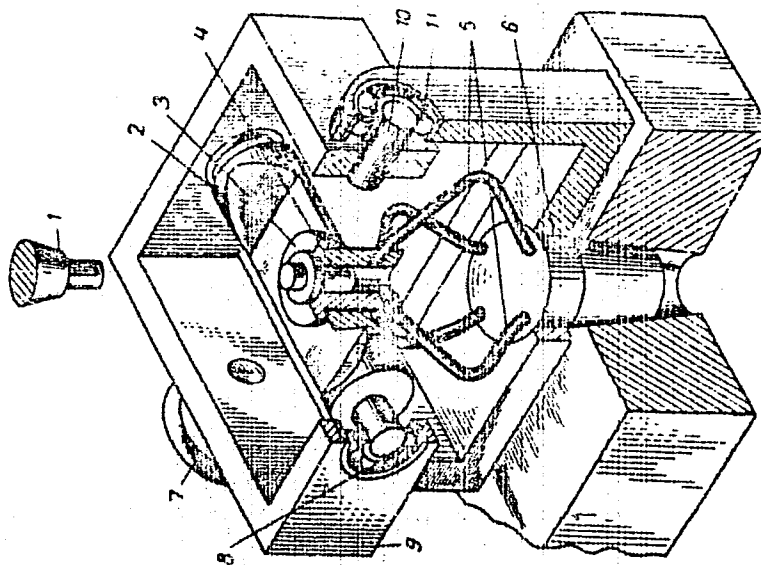
15.6.67 as 1163984/25-27. S.I. SEMERGEEV et alia.
E.O. PATON ELECTRIC WELDING INST. (1.9.69) Bul 14/
18.4.69. Class 21 h, '49 h, Int.Cl.B 23k.

AUTHORS: Semergeyev, S. I.; Shinkarenko, B. P.; and
Nepryakhin, V. A.

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Institut Elektrosvarki imeni Ye. O. Patona 18

19750308

AA0040691



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USSR

UDC: 621.791:62-415.62-42

KOCHUKOV, N. S. (Candidate of Technical Sciences), SMIRNOV, I. V. (Technician), BOGDANOV, YE. M., RAUCHIN, I. V. and SEMERIKOV, N. V. (Engineers)

"Welding of Tee and Multi-Tee Sections From Sheet Metal"

Moscow, Svarochnoye proizvodstvo, No 12, Dec 71, pp 29-31

Abstract: Thin-walled tee shapes are finding ever-increasing application on account of lighter weight and greater rigidity. The recent trends and techniques of producing tee structures include automatic argon arc welding. Discussed here is the method of full-penetration welding to produce a convex (reinforced) weld (over 2 mm thick) successfully tested on various sheet materials (0.6-2 mm thick), including steels and alloys 1Kh18N9T, VZh-102, VMS-16, EI435, OPh-1, VT-5. The weld strength is rated on the basis of tensile and tear tests of the welded flange. In tensile tests the failures occurred along the transition zone; the tear-induced failures were in the parent metal indicating the significance of the reinforced weld.

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KOCHUKOV, N. S. (Candidate of Technical Sciences), et al, Svarochnoye
proizvodstvo, No 12, Dec 71, pp 29-31

Complete adherence of parts to be welded is facilitated by the use of rolls
enabling greater productivity at lower expenditures for assembly and welding
jigs. (7 illustrations, 1 table).

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USSR

UDC: 620.193.4

SUKHOTIN, A. M., SEMERIKOVA, I. A., KRIVITSKAYA, N. L., PARSHKOV, I. S.

"Corrosion of Metals in Freon 11 (CCl_3F) at 50-250° C"

Moscow, Zashchita Metallov, Vol 9, No 4, Jul-Aug 73, pp 402-406.

Abstract: This work summarizes and supplements data produced by the same authors earlier on the corrosion resistance of metal materials in freon 11 at temperatures of 50 to 250° C. The corrosion behavior of steels types 3, 1Kh13 and Kh18N10T, N2 nickel, monel metal NMZhMts S2-2.5-1.5, M1 copper, AD1 aluminum, SO lead, BrA5 bronze and LO62 brass was studied. The corrosion tests were performed in 1.5 l autoclaves of Kh18N10T steel. The corrosion rate was determined gravimetrically. During the tests, the freon 11 was partially decomposed, increasingly at increasing temperatures. The corrosion rates determined varied widely with type of material and temperature.

USSR

UDC 621.762.3(088.8)

SHOLYUBSKIY, V. I., and SEMERNEV, A. I.

"Apparatus for Making Powder Mixtures"

USSR Authors' Certificate No 273382, Cl. 31 b³, 1/00, (B 22 f 1/00), filed 10 Jan 68, published 10 Sep 70 (from *RZh-Metallurgiya*, No 3, Mar 71, Abstract No 36417P by I. Brokhin)

Translation: An apparatus is suggested for making powder mixtures. It consists of a batchmeter with a moving conveyer belt and a mixer with a charging hopper. In order to increase accuracy in the metering of components and make it possible to prepare mixtures of variable composition, the apparatus is equipped with a moving batching frame (situated on the conveyer belt) with at least two cavities, the cross-sections of which vary according to a pre-set program. A diagram of the apparatus is presented. Two illustrations.

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USSR

UDC 519.21

POZHIDAYEV, V. F., SEMESENKO, M. P.

"Estimate of Asymptotic Representation of Spectral Density of Random Processes"

Tekhn. Kibernetika. Vyp. 6 [Engineering Cybernetics, No 6 -- Collection of Works], Kiev, 1970, pp 29-37, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V174 by V. Makovskiy).

Translation: This work is a continuation of work published earlier (RZhMat, 1970, 8V98) and consists of a very carefully performed estimate of the residual term in an asymptotic representation of the spectral density of random processes. An example is presented of the use of the approximation of spectral density suggested.

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USSR

UDC 612.826+612.822.1

SEMESHINA, T. M., Laboratory of General Physiology (director -- A. D. Slonim),
Institute of Physiology of the Siberian Department of the Academy of Sciences
of the USSR, Novosibirsk

"Changes in the RNA Content of Different Sections of the Cerebrum of Citellus
erythrogenys During Hibernation"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 57, No 11,
1971, pp 1,616-1,620

Abstract: Changes in the RNA content of the hippocampus, hypothalamus, and
frontal and medial areas of the cortex of the red-cheeked ground squirrel
Citellus erythrogenys during hibernation were studied. The results obtained
show that RNA is part of the adaptive mechanisms that operate in the brain
during hibernation.

First, it was determined that the RNA content of the frontal and medial
areas of the cortex is significantly higher than that of the hippocampus and
hypothalamus during the active, prehibernation period (June). At the beginning
of hibernation (October), the RNA content of the hippocampus decreased some-
what, but statistically reliable ($p < 0.001$) changes could not be detected in
either the frontal or medial areas. As the squirrels went deeper into hiber-
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SEMESHINA, T. M., Fiziologicheskii Zhurnal SSR imeni I. M. Sechenov, Vol 57,
No 11, 1971, pp 1,616-1,620

nation (November through February), there was a more pronounced decrease of RNA in the hippocampus, accompanied by a decrease of RNA in the hypothalamus and frontal area. The level of RNA in the medial area still did not change. During the remaining months of hibernation (March and April), the RNA content of the hippocampus and frontal area stayed at a low level, while the RNA content of the hypothalamus went back up to its prehibernation level. As before, the RNA level of the medial area of the cortex did not change.

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SEMEVSKIY, R. B.

145 59624
1 Aug 73 (1)

POSSIBILITIES OF USING DIFFERENTIAL MAGNETOMETERS WITH MOBILE BASE

Article by L. N. SEMENOV, Leningrad, Sovetskaya Apparatura, Russian,
No 50, 1972, pp 14-19

The interest which is being manifested in differential magnetometers (magnetometers) is associated with the possibility of utilizing them for measuring the constant magnetic field of Earth (MFE), its variations through time, and the absolute travel speed of the equipment carrier (ship, aircraft, U.S. and French patents). Some of these questions were first reviewed in

Any quasi-permanent physical field which is being observed, including the MFE, can be regarded in a general case, in the form of function $f(X, Y, Z, t)$, where X, Y, Z - coordinates of a certain point in a three-dimensional space, and t - time. The existing techniques of directly measuring the variable magnetic fields by stationary variations of directly measuring the variations from the observed field the constant $f_0(X, Y, Z)$ and variable $f_1(X, Y, Z, t)$ parts. In this instance

$$f(X, Y, Z, t) = f_0(X, Y, Z) + f_1(X, Y, Z, t) \quad (1)$$

1. Zurfluch, Ernst G. Method and Apparatus Utilizing a Pair of Spaced Magnetometers for Making Magnetic Surveys. U.S. Patent 3,014,308, No 3490012, 1970. GSF - General Radio Company. System based on measuring speed with magnetometers. French Patent. 864-001-001P, No 1407686, 1965.

USSR

Aluminum and Its Alloys

UDC 669.71:548.53:534.2

BALALAYEV, Yu. F., GAPONOV, M. A., and SEMICHEV, A. N., Voronezh Polytechnical Institute

"Recrystallization and Change in Texture of Aluminum Under the Influence of Ultrasound"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 1091-1093

Abstract: The specifics of the recovery, recrystallization, and texture changes in peened aluminum exposed to high plastic deformation energy density and strong thermal effects by ultrasound were studied roentgenographically. Ultrasound causes a removal of strain hardening, which may occur in several ways with various degrees of completeness, as during recrystallization. The conditions of the processes occurring during ultrasonic treatment and ordinary recrystallization differ. Ultrasound causes simultaneous deformation and annealing, whereas in recrystallization these processes occur at different times. However, this does not change the nature of the effect itself, merely its conditions and kinetics.

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USSR

UDC 632.95

SEMIDETKO, V. V., and GOLOLOBOV, Yu. G.

"A Method of Synthesizing S-[α -alkoxy-alkylmercapto]]-vinyl Phosphates"

USSR Author's Certificate No 259877, filed 10 Jun 68, published 20 May 70
(from RZh-Khimiya, No 3, 10 Feb 71, Abstract No 3N554)

Translation: Dialkyl S-vinylphosphates of the general formula $(RO)_2P(O)-SC(XR')=CH_2$ (I), where R and R' = a lower alkyl, X = O, S, are synthesized by the reaction of dialkylthiophosphoric acid with alkoxy- or alkylmercaptoacetylene followed by isolation of I by conventional methods. Five and one-half grams of $(EtO)_2P(O)OH$ is slowly added to 3 $EtOC\equiv CH$; the temperature rises to 45-50°C; the temperature is held at approximately 20°C for 2-3 hours and the product is distilled under vacuum. Double distillation yields 5.5 g of I (R = EtO; R'X = EtO), yield 70.8%, boiling point 75-76°C/0.005, n_D^{20} 1.4690, d_4^{20} 1.1315. An analogous method is used to produce compound I with R = EtO, R'X = EtS, yield 85.4%, boiling point 87°C/0.005, n_D^{20} 1.5090, d_4^{20} 1.1610. Compounds I may be used as insecticides.

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USSR

UDC: 547.26.118'311.07

SEMIDETKO, V. V., GOLOBOV, YU. G.

"A Method of Producing Dialkyl-S- α -alkoxy(alkylmercapto)vinylphosphates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, p 31, patent No 259877, filed 10 Jun 68

Abstract: This Author's Certificate introduces a method of producing dialkyl-S- α -alkoxy(alkylmercapto)vinylphosphates. The distinguishing feature of this method is that dialkylthiophosphoric acid reacts with alkoxy- or alkylthioacetylene with subsequent isolation of the product by conventional methods.

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--COMPARATIVE CHARACTERISTICS OF SOME IMMUNOLOGICAL INDICES IN
PATIENTS WITH DIFFUSE GLOMERULONEPHRITIS -U-
AUTHOR--SEMIOTSKAYA, KH.D. S
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 107-110
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--KIDNEY, DISEASE, ANTIBODY, NEPHRITIS, HORMONE,
IMMUNOSUPPRESSIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1705 STEP NO--UR/0475/70/000/004/0107/0110
CIRC ACCESSION NO--AP0129075
UNCLASSIFIED

2/2 019
CIRC ACCESSION NO--AP0129075 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE REPORTED ON A STUDY OF
AUTOSENSIBILIZATION IN 85 PATIENTS WITH ACUTE AND CHRONIC DIFFUSE
GLOMERULONEPHRITIS BY VARIOUS SEROLOGICAL METHODS. ACCUMULATION WAS
REVEALED OF ANTIRENAL AUTOANTIBODIES DURING EXACERBATION OF THE DISEASE
PARALLEL WITH INCREASE OF ITS SEVERITY AND ADVANCE OF RENAL FAILURE. A
PARALLELISM HAS BEEN FOUND BETWEEN BOYDEN'S REACTION AND COMPLEMENT
FIXATION REACTION. AN ANALYSIS OF IMMUNOLOGICAL INDICES IN 36 PATIENTS
WITH NEPHRITIS BEFORE AND AFTER PREDNISOLONE AND DELAGIL TREATMENT DID
NOT REVEAL IMMUNODEPRESSIVE EFFECT OF THESE PREPARATIONS.

PROCESSING DATE--30OCT70

UNCLASSIFIED

USSR

UDC 8.74

MASHKINA, R. V., PRACHENKO, V. D., SERGIYENKO, I. V., SEMIK, V. P., TUKALEVSKAYA, N. I.

"Automated Information Servicing and Data Processing Systems for a Library of Algorithms and Programs. Part I"

Avtomatizirovannaya sistema informatsionnogo obsluzhivaniya i obrabotki dannykh fonda algoritmov i program. Ch. I (cf. English above), Kiev, Cybernetics Institute of the Ukrainian SSR Academy of Sciences, 1972, 204 pp, ill., 60 k. (from RZh-Kibernetika, No 12, Dec 22, Abstract No 12V472 K)

Translation: An automated information servicing and data processing system for an algorithm and program library on a computer, its program and information servicing and also the operating procedures for this system are described. In the first chapter the basic problems of developing the system, the steps in its creation and its operating conditions are discussed, and one method of combining the principles of universality and specialization providing the basis for the construction of the system is described. In the second chapter there is a description of the shape of the input and output documents of the system and the structure of the user-system communication language. The third chapter is devoted to a discussion of means of describing the system: the language of the data flow diagrams, the block-system language and the operating address

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MASHKINA, R. V., et al., Avtomatizirovannaya sistema informatsionnogo obsluzhivaniya i obrabotki dannykh fonda algoritmov i programm. Ch. I, Kiev, Cybernetics Institute of the Ukrainian SSR Academy of Sciences, 1972, 204 pp, ill., 60 k.

language for description of the system procedures. In the fourth chapter the program library for the system and the structure of its information files are described by the means discussed in the third chapter. The fifth chapter contains the problems of introduction and maintenance of the system.

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USSR

UDC 8.74

MASHKINA, R. V., PRACHENKO, V. D., SERGIYENKO, I. V., SEMIK, V. P., TUKALEVSKAYA, N. I.

"Automated Information Servicing and Data Processing Systems for a Library of Algorithms and Programs. Part II"

Avtomatizirovannaya sistema informatsionnogo obsluzhivaniya i obrabotki dannykh fonda algoritmov i programm. Ch II (cf. English above), Kiev, Cybernetics Institute of the Ukrainian SSR Academy of Sciences, 1972, 208 pp, ill., 60 k. (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V473 K)

Translation: The allocation of the system software on the information carriers and the software for the Dnepr-2 computer are presented.

Epidemiology

USSR

UDC 616.621.5-036.33+576.858.75

IL'INA, T. S., DZHALALOV, KH. D., VARSANOVA, YE. TA., YELISEYEVA, T. S.,
SEMIKHANIDU, L. G., and KIRGIZOVA, T. M., Laboratory of Virology, Scientific
Studies Institute of Epidemiology, Microbiology, and Infectious Diseases

"Epidemiological Characteristic of Three Epidemics of Flu Produced by the A₂
Hong Kong Virus"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 73, pp 68-73

Abstract: Since the appearance of the A₂ Hong Kong flu virus in January, 1969, in Tashkent, there have been three epidemics. Although the epidemics were similar in a general way, each exhibited particular features of the spread of infection, age of those infected, change with time and season of the year, and immunological characteristics toward various serums. The studies indicated that the cycles of flu produced by the A₂ Hong Kong-68 flu virus showed a tendency toward a gradual damping of the epidemic process, which is expressed in a decrease in the intensity of subsequent epidemics, in the reduction in the severity of the disease, in a decrease in infectiousness among adults, but an increase among young children, and in a general increase in immunity.

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USSR

UDC: 002.513.5:676.815.2:550.34

SEMIKHODSKIY, G. Ye.

"Information Retrieval System for Seismic Prospecting"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Metodika Informatsionnoy Raboty, No 5, 1970, pp 31-32

Abstract: The principles of the creation of an information retrieval system for seismic documentation are studied. The system is to perform the following tests: 1) Information servicing of specialists in the process of development of methods and devices for seismic prospecting at three levels, characterized by different depths of study of the material. At the first level, the consumer is given lists of documents in his area of interest; at the second level, abstracts of documents are presented; at the third level, the original document is retrieved and provided; 2) Provision is made for advice as to patent purity and patentability of suggested inventions, as well as preliminary analysis of the level of development of each branch of technology. The information file is to consist of edge-perforated cards. Examples of card formats and typical card information are presented.

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1/2 031 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--KINETICS OF CARBON OXIDATION DURING THE BLOWING OF METAL IN AN OPEN
HEARTH FURNACE BATH. 2 -U-
AUTHOR--(03)-SEMIKIN, I.O., CHELYADIN, M.M., MISYURA, I.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 65-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--OXIDATION KINETICS, LOW CARBON STEEL, OPEN HEARTH FURNACE, GAS
JET, OXYGEN, CHEMICAL EQUILIBRIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0817 STEP NO--UR/0148/70/013/004/0065/0067
CIRC ACCESSION NO--AT0132908
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132908

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREVIOUSLY (S., ET AL., 1970) THE DEPENDENCES WERE OBTAINED DESCRIBING THE KINETICS OF OXIDN. OF C DURING BLOWING OF THE METAL WITH A FINAL C CONTENT GREATER THAN OR EQUAL TO 0.2PERCENT. IN CASE OF BLOWING OF LOW C (LESS THAN 0.2PERCENT C) STEELS, THERE TAKES PLACE A SLOWING DOWN IN THE OXIDN. RATE OF C AS A RESULT OF AN INCREASE IN THE EQUIL. CONC. OF O IN THE METAL. UPON A FURTHER DECREASE IN THE TOTAL C CONTENT ITS OXIDN. DECREASES. IN THE INITIAL PERIOD THE O LED INTO THE BATH IS PARTIALLY USED FOR THE OXIDN. OF C, AND PARTIALLY IT IS TAKEN UP BY THE SLAG IN THE FORM OF FEO, WHICH IS WHY V SUBC BECOMES MAS. ONLY AFTER ATTAINING A CERTAIN MAX. FEO CONC. THIS PERIOD CAN PARTIALLY OR TOTALLY BE ABSENT, IF AT THE BEGINNING OF THE BLOWING THE FEO CONC. IN THE SLAG CORRESPONDS TO THE REGULAR CONDITIONS. UNDER REGULAR CONDITIONS THE O IN THE SLAG DOES NOT INCREASE AND THE RATE OF OXIDN. OF C IS DETD. FOR ALL PRACTICAL PURPOSES BY THE INTENSITY OF THE BLOWING. THE LATTER (ERO) PERIOD IS DISTINGUISHED FROM THE PREVIOUS TWO BY A SHARP DECREASE IN V SUBC, WHICH IS CAUSED BY INTENSE OF THE O IN THE METAL AND THE SLAG. THE DECREASE IN V SUBC BECOMES VERY SIGNIFICANT AT C CONC. LESS THAN 0.2-0.3PERCENT, WHICH IS WHY HTE 3RD PERIOD IS POSSIBLE ONLY IN THE CASE OF BLOWING OF LOW C STEELS. THE EQUATIONS OBTAINED HEREIN FOR THE DETN. OF V SUBC AND THE RATE OF INCREASE OF FEO IN THE SLAG ARE APPLICABLE FOR OPEN HEARTH AND FOR CONVERTER PROCESSES. FACILITY: DNEPROPETROVSK. MET. INST., DNEPROPETROVSK, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--2300170

1/2 016

TITLE--THERMAL OPERATION OF A BLAST FURNACE DURING COMBINATION BLAST -U-

AUTHOR--(02)-BORODULIN, A.V., SEMIKIN, I.D.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 160-4

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, NATURAL GAS, COAL, METAL REDUCTION, HEAT ENERGY
CONVERSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1403

STEP NO--UR/0148/70/013/002/0160/0164

CIRC ACCESSION NO--AT0120196

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0120196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCNS. SHOW THAT WITH BLAST TEMP. OF 1000DEGREES, THE COEFF. OF HEAT UTILIZATION OF COKE IS 0.34, WHILE THAT OF COLD COAL DUST IS 0.27, AND THAT OF C IN NATURAL GAS IS NEGATIVE0.08. HERE LIES THE GREAT ADVANTAGE OF COAL DUST OVER NATURAL GAS AS A BLAST FURNACE FUEL. BLASE ENRICHMENT WITH O LOWERS THE DYNAMIC PRESSURE OF THE GAS STREAM (BECAUSE OF SMALLER VOL.), AND THIS ENABLES ONE TO INCREASE THE AMT. OF HEAT EVOLVED IN THE FURNACE WITHOUT INCREASING THE AERODYNAMIC RESISTANCE OF THE CHARGE. THE COLD NATURAL GAS CAUSES A DECREASE OF THE HEAT UTILIZATION COEFF. IN A BLAST FURNACE (E.G., WITH 77 M PRIME3-TON PIG IRON, THE COEFF. DECREASED BY 12PERCENT). THE COKE ECONOMY DUE TO THE USE OF NATURAL GAS IS PRIMARILY CAUSED BY THE DECREASE OF DIRECT REDN. OF THE FE. THE ENRICHMENT OF THE BLAST WITH O TO 26.4PERCENT INCREASED THE AMT. OF HEAT GENERATED IN THE FURNACE BY 20PERCENT AND THE PRODUCTIVITY BY 10PERCENT. THE INCREASE OF AIR BLAST TEMP. BY 100DEGREES IN THE INTERVAL 1200-1500DEGREES INCREASED THE PRODUCTIVITY OF THE BLAST FURNACE BY 4-5PERCENT AND DECREASED THE FUEL CONSUMPTION BY 1.5-2PERCENT; HOWEVER, THE VOL. OF GASES AND THE AERODYNAMIC RESISTANCE OF THE CHARGE INCREASED. FACILITY: DNEPROPETROVSK. MET. INST., DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 015
UNCLASSIFIED
TITLE--KINETICS OF CARBON OXIDATION DURING THE BLOWING OF A METAL IN AN
OPEN HEARTH FURNACE BATH -U-
AUTHOR--(03)-SEMIKIN, I.O., CHELYADIN, M.M., MISYURA, I.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 43-6
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--OPEN HEARTH FURNACE, STEEL MANUFACTURING PROCESS, SLAG,
OXIDATION, CARBON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1394
STEP NO--UR/0148/70/013/002/0043/0046
CIRC ACCESSION NO--AT0120187
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AT0120187
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE KINETICS ARE DISCUSSED
BY ASSUMING THAT THE METAL AND SLAG REPRESENT BODIES OF "IDEAL MASS
TRANSFER" (DUE TO THE INTENSIVE INTERMIXING BY THE BLAST). EQUATIONS
ARE DERIVED FOR: (1) THE RATE OF C OXIDN., (2) THE AMT. OF C REMOVED
DURING THE TIME OF BLASTING, AND (3) THE RATE OF O TRANSFER FROM THE
SLAG INTO THE METAL. THESE EQUATIONS CAN BE USED UP TO A C CONC. OF
0.2PERCENT IN THE METAL. FACILITY: DNEPROPETROVSK. MET. INST.,
DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MECHANICALLY DRIVEN MOESSBAUER SPECTROMETER -U-
AUTHOR-(04)-CHEKIN, V.V., BALKASHIN, O.P., NAUMOV, V.G., SEMIKIN, V.A..
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(1), 103-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SPECTROMETER, PHYSICS LABORATORY INSTRUMENT/(U)MOESSBAUER
SPECTROMETER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0917 STEP NO--UR/0032/70/036/001/0103/0106
CIRC ACCESSION NO--AP0107446
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECH. DRIVE SPECTROMETER WAS CAREFULLY DESIGNED WITH A CONST. SPEED SYNCHRONOUS MOTOR WITH A WORM GEAR EXHIBITING A GEAR RATIO OF 1:80, A SINGLE CHANNEL GAMMA SPECTROMETER, AN ELECTRONIC NETWORK REGULATOR, AND SPECIAL REINFORCING TO IMPROVE THE DRIVE RIGIDITY. WHILE COSTING ONLY A FRACTION OF THAT FOR THE BASIC ELECTRODYNAMIC VIBRATOR SET UP, THE RESULTS WITH THE PRIME57 FE NUCLEUS WHEN BOTH SET UPS WERE COMPARED WERE EQUIV. WITHIN THE LIMITS OF EXPTL. ERROR. FACILITY: FIZ.-TEKH. INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

SE MIKOLENOVA, N.A.

57R-5 59248
6-73

C

XI-5. OBTAINING COMPENSATED MATERIALS IN THE MERCURY TELLURIDE AND CARBIDE SYSTEM

[illegible]

In this paper a study is made of the possibility of obtaining materials with maximum compensation of the characteristic electrically active states. The inverse compensation

The large crystalline and amorphous crystalline bars were obtained by the Bridgman method. Determination of the composition along the bar permitted some refinement of the position of the solidus line on the diagram of state.

A study was made of the compensation of electrically active centers by alloying in a melt and by annealing the crystals in the vapors of the components. The properties of the materials obtained were determined both by optical and by galvanomagnetic measurements.

There is a detailed discussion of the problem of determining the composition of solid solutions by different methods.

SEMIROLENOVA, N.A.

SPRS 59005
6.73

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XI-3. OBTAINING THE MATERIALS OF $A_{3.5}B^{2.6}$ SOLID SOLUTIONS CORRESPONDING TO THE COMPOSITION OF THE A_3B INTERMETALLIC

Article by Ye. V. Kalashnikova, V. I. Korzhov, V. N. Morozov, A. A. Petrov, H. A. Semakulova, L. A. Tchernobogova, V. K. Filanzenova, V. A. Vashkova, S. N. Kostarov, Irkutsk; Novosibirsk, Tili Stigmatisum per Proteasum Ruzici, Siberia Polynordendricum Krasnodar I Plenti Russian .. 27

A study was made of the conditions of the crystallization of semiconductor solid solutions of InAs-CdTe and InSb-CdTe. The distribution of the composition of the solid solutions along the ingot corresponds to a diagram of state of pseudobinary systems. It was discovered that the

[illegible]

Studies were made of the possibility of obtaining materials with stoichiometry of the current carriers by varying the degree of the halogen-magnetic properties of the characteristic solid solutions on the materials obtained.

USSR

UDC 669.14.010.29.002.657

DANICHEK, R. Ye., CHUYKO, N. M., PERENYAZKO, A. T., ~~PIROZHENKO~~, V. P., LITVENOVA, T. I., and SEMIKOPENKO, A. P., Dnepropetrovsk Metallurgical Institute

"Nonmetallic Inclusions in Structural Titanium-Containing Steels"

Novokuznetsk, Izv. VUZ, Chern. Metallurgiya, No 10, 1970, pp 48-51

Abstract: The influence of the deoxidation mode on the content and composition of nonmetallic inclusions in structural titanium-containing steel is studied with two versions of smelting: the current technology, and an experimental technology involving preliminary deoxidation of the metal with aluminum and calcium-silicon alloy plus diffusion deoxidation with powders of 75% ferrosilicon (0.4-0.6%) aluminum (0.2-0.25%), and coke (0.2-0.5%). Sedimentary deoxidation with aluminum (0.07-0.08%) is performed before introducing the ferroalloy. This deoxidation forms nonmetallic inclusions predominately composed of alumina, which facilitates their rapid removal from the metal. The improved deoxidation mode, in combination with protection of the stream of metal from secondary oxidation during casting, allowed the mean content of nonmetallic inclusions to be reduced from 0.0228 to 0.0146%. Rejection of castings was reduced from 11.5% to 0.8%.

1/1

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Aeronautical and Space

USSR

SEMILETENKO, B. G., SOBKOLOV, B. N., USKOV, V. N.

"Interpretation of the Shock-Wave Processes Which Accompany Unstable Interaction Between a Jet and an Obstacle"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 13(208), Issue 3, Oct 72, pp 39-41

Abstract: When a supersonic jet strikes a flat obstacle with dimensions much greater than the maximum diameter of the jet, there is an abrupt drop in the frequency of pressure oscillations and an increase in their amplitude when the jet nozzle reaches a certain distance from the barrier. In this situation, the shock wave structure is strongly diffused, and the central shock wave fluctuates with a large amplitude at a frequency corresponding to that of the pressure oscillations. Such a mode of interaction has been termed strong instability. In this mode when the pressure in the center of the obstacle is lower than at the periphery blocking of the central region is observed as a result of adhesion of the tangential discontinuity to the surface of the obstacle. Adhesion takes place at a distance from the jet axis approximately equal to the maximum radius of the

1/2

USSR

SEMILETENKO, B. G. et al., Izv. SO AN SSSR, Ser. Tekhn. Nauk, No 13(208),
Issue 3, Oct 72, pp 39-41

jet. This paper proposes a possible interpretation of the shock-wave processes accompanying such a collapse of the tangential discontinuity. The proposed hypothesis can be used to explain the pattern of sound emission in the ambient medium during the interaction process. The shock waves which arise during the process are reflected from the surface of the obstacle into the surrounding medium. One or more waves may result, depending on the number of reflections of a shock wave in the period of a single oscillation. While the proposed interpretation applies to obstacles much larger than the maximum jet diameter, the case of obstacles with dimensions comparable to the maximum jet diameter is basically similar.

2/2

- 5 -

USSR

SEMILETENKO, V. G., SOBKOLOV, B. N., USKOV, V. N., Leningrad Mechanics Institute

"Particulars of Unstable Interaction Between a Supersonic Jet and an Infinite Obstacle"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 13(208), Issue 3, Oct 72, pp 47-51

Abstract: The paper gives some of the results of experimental studies of the process of unstable interaction between an airjet and an infinite barrier. The results apply primarily to the frequency and amplitude characteristics of wave structure oscillation in the jet preceding the obstacle and pressure oscillations on the boundary. Pressure oscillations on the barrier were measured and the wave structure in the jet was visualized by the IAB-451 shadow device and the SFR-1M high-speed camera. Pressure pulsations on the barrier were measured by LKh-601 piezoelectric sensors and recorded on the S-1-4 oscillograph. Frequency responses were tape-recorded and decoded on the ASChKh-1 spectrum analyzer. The passband of the recording equipment was 20 Hz to 20 kHz. The experiments were done on airjets with $M_a = 1-3$ and $n = 1.5-20$.

1/1

SEMILETOV, S.A.

JPRS 59066
C-73

14-6. STUDY OF THE FORMATION OF THE LEAD SULFIDE FILM STRUCTURE ON SUBSTRATES OF ROCK SALT SUBJECTED TO BOMBARDMENT BY He^+ , Ar^+ , Br^+ IONS

Article by Ye. I. Zorin, R. V. Kudryavtseva, M. A. Kochalova, P. V. Pavlov, S. A. Semiletov, Gor'kiy, Gor'kiy Research Physicochemical Institute under the USSR Academy of Sciences, 117 336 Moscow, U.S.S.R. Published in Radiatsiya i Elektronika, 1974, 12-17 June, 1974, p 491

There are various opinions regarding the effect of substrate defects on the nature of the crystallization and the structure of continuous films. Therefore, discovering the growth laws of the films on the substrates with automatically created defects is of scientific and practical interest.

In this paper the methods of electron diffraction and electron microscopy were used to study the laws of the formation of thin films of lead sulfide obtained by condensation in a vacuum on the order of $3 \cdot 10^{-6}$ torr on rock salt cleavages irradiated in advance by He^+ , Ar^+ , Br^+ ions in equal doses from $3 \cdot 10^{14}$ to 10^{15} ions/cm².

It was established that:

- 1) Irradiation of the NaCl substrate with He^+ , Ar^+ and Br^+ ions leads to the fact that the film formation proceeds much more rapidly than on the control substrate, that is, the formation process is shifted in the direction of smaller thicknesses.
- 2) The magnitude of the critical thicknesses for which one growth stage or another takes place is less the greater the mass of the ions and the irradiation dose.
- 3) When determining the irradiation dose, depending on the type of ion, the epitaxial growth of the film is disturbed; irradiation by Br^+ ions with doses on the order of 10^{15} ions/cm² leads to the formation of polycrystalline films.
- 4) In the films grown on irradiated substrates, defects of the crystal structure occur which are the same as on the control substrates (dislocations, dislocation grids, growth configurations), but with higher concentration.

SEMILETOV, S. A.

SMS 59208

6-73

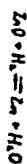
3

V-13. EPITAXIAL FILMS OF ZINC OXIDE ON SAPPHIRE AND OTHER SUBSTRATES

(Article by S. A. Semiletov, R. A. Babadany, A. M. Bagdasaryan, Moscow; Soyuzbirek, 11 Slepovitskaya po Proletarsk, Route 1, Sverdlovsk, 12-17 June, 1972, p. 64)

Kristallov i Plazma, Russian, 12-17 June, 1972, p. 64

In the report results were presented which were obtained when studying the initial growth stages, the microphotography and the defect structure of epitaxial films of zinc oxide on sapphire, germanium and gallium arsenide. The films were grown by the method of chemical transport using the following reaction:



The measurements of the electrical conductivity and the Hall effect and their temperature dependence permitted us to obtain information about the concentration of excess zinc atoms in the ZnO film and its dependence on the film orientation and growth rate.

In sufficiently thick layers (> 10 microns), the Hall mobility of the electrons is 160-180 cm²/volt-sec, and the concentration is 2-4 · 10¹⁸ cm⁻³ (for 300°K).

SEMILETOV, S.A.

SPRS 59208
6-73

XII-10. STRUCTURE AND ELECTRICAL PROPERTIES OF INDIUM ARSENIDE FILMS GROWN BY THE GAS TRANSPORT METHOD IN WATER VAPOR

[Article by G. V. Chuplygin, S. A. Semiletov, T. I. Shcherbakova, Moscow: Novosibirsk, Ill. Sibirskiy Nauchno-Issledovatskiy Tsentr Poluprovodnikov, Katalizator I plenum, Krasnoyarsk, 12-17 June 1977, p. 173]

A study was made of the dependence of the morphology, the actual structure and the electrical properties of indium arsenide films on the composition of the mass phase, the temperature in the crystallization zone and the orientation of the substrates made of polished gallium arsenide.

On the basis of the thermodynamic analysis of the $\text{InAs-H}_2\text{O-H}_2$ system, the water vapor pressure region was defined which ensures a stoichiometric ratio of indium and arsenic in the gas phase.

It was demonstrated experimentally that the indium arsenide films obtained by the gas transport in water vapor are not inferior to the initial single crystals with respect to their electrical properties.

1/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--STRUCTURE AND PROPERTIES OF ZINC OXIDE SINGLE CRYSTAL LAYERS -U--

AUTHOR--(03)-RABADANOV, R.A., SEMILETOV, S.A., MAGOMEDOV, Z.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1431-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--SINGLE CRYSTAL, ZINC OXIDE, ELECTRIC PROPERTY, HALL EFFECT,
ELECTRON DIFFRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/0955

STEP NO--UR/0181/70/012/005/1431/1436

CIRC ACCESSION NO--APG133041

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133041

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. PROPERTIES AND THE PERFECTION OF THE STRUCTURE WERE INVESTIGATED OF SINGLE CRYSTAL FILMS OF ZNO GROWN FROM THE GASEOUS PHASE ON THE PLANES OF CLEAVAGE OF MICA, AL SUB2 O SUB3, PLATES WITH (0001) ORIENTATION, (1120), (1011), AND (1012), AND ON THE (0001) FACE OF ZNO SINGLE CRYSTALS. THE FILM STRUCTURE WAS RELATED TO CONDITIONS OF ITS GROWTH AND TO THE ORIENTATION AND TREATMENT OF THE SUBSTRATE. ELECTRON DIFFRACTION DIAGRAMS WITH KIKUCHI LINES AND BANDS, AND PHOTOMICROGRAPHS SHOW A HIGH PERFECTION OF THE OBTAINED FILMS. THE MOBILITY AND CONCN. OF ELECTRONS IN THE BETTER SPECIMENS AS MEASURED BY THE HALL EFFECT AT ROOM TEMP. AND THE LIQ. N TEMP. ARE 140 AND 400 CM PRIME2 V SEC AND 2.4 TIMES 10 PRIME16 AND 6 TIMES 10 PRIME15 CM PRIME NEGATIVE3. THE GIVEN METHOD FOR PREPG. ZNO FILMS ASSURES A HIGH GROWTH RATE (SIMILAR TO 8 MU-MIN) AND GOOD REPRODUCIBILITY. FACILITY: INST. KRISTALLOGR, MOSCOW, USSR.

UNCLASSIFIED

1/2 019
TITLE--CRYSTAL CHEMISTRY OF SEMICONDUCTORS WITH OCTAHEDRAL AND MIXED
COORDINATION OF ATOMS -U-
AUTHOR--(03)-IMAMOV, R.M., SEMILETOV, S.A., PINSKER, Z.G.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 287-93
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--CRYSTAL, SEMICONDUCTOR MATERIAL, GERMANIUM, TIN COMPOUND, LEAD
COMPOUND, BISMUTH COMPOUND, SELENIUM COMPOUND, TELLURIUM COMPOUND,
TELLURIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0908
CIRC ACCESSION NO--AP0116418
STEP NO--UR/0070/70/015/002/0287/0293
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116418

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CRYSTAL STRUCTURES WERE ANALYZED FOR A NO. OF TERNARY SEMICONDUCTING COMPOS. FORMED IN THE PSEUDOBINARY SYSTEMS MA PRIMEVI X PRIMEVI NB SUB2 X SUB3 PRIMEVI (A EQUALS GE, SN, AND PB; B EQUALS SB AND BI; X EQUALS SE AND TE). IN ALL OF THESE COMPOS. OCTAHEDRAL COORDINATION WAS FOUND FOR THE ATOMS, AND THEIR STRUCTURES ARE INTERMEDIATE BETWEEN BI SUB2 TE SUB3 AND PBTE (NACL). THE CUBIC PACKING OF THE DIFFERENT TYPES OF ATOMS IS CHARACTERISTIC FOR THE STRUCTURE OF THE STARTING BINARY COMPOS. AND IT IS RETAINED IN THE TERNARY PHASES ALSO. THE LATTICE PARAMETERS FOR THE TERNARY COMPOS. ARE RELATED TO THE PARAMETERS OF THE BINARY COMPOS. BY SIMPLE EXPRESSIONS. ANALOGOUS RELATIONS WERE ALSO OBSD. FOR TERNARY PHASES WITH A MIXED COORDINATION FOR THE ATOMS. THESE FORMULAS CAN BE USED TO DET. THE PERIODS FOR ANY OF THE INTERMEDIATE STRUCTURES. THE TOTAL NO. OF LAYERS IS DETD. BY THE EXPRESSION N EQUALS Z(2M PLUS 5N), WHERE Z IS THE NO. OF FORMULA UNITS PER UNIT CELL OF THE TERNARY SYSTEM.

FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

AA0043503

Semiletov, U.A.

UR 0482

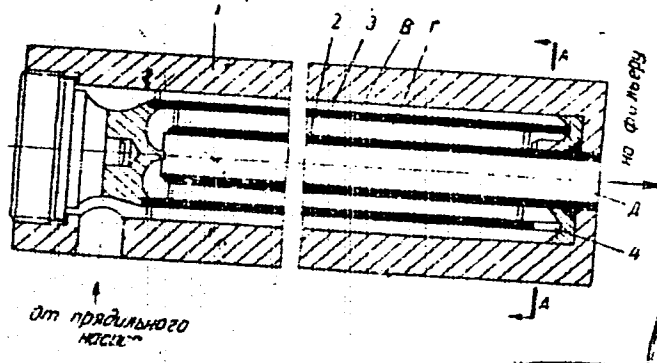
Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

223991 IMPROVED HOMOGENEITY OF POLYMER MELTS
for synthetic yarns is ensured by incor-

porating a nozzle, consisting of two concentric
finned tubes between the pump and the spinneret
unit in a spinning block. The melt from the pump
passes first into annular cavity B between the
internal wall of casing 1 and the external wall of
finned tube 3. The melt then passes through orifice
4 in tube 3 and into cavity Γ between tubes 2 & 3.
This agitates the melt and heats it from both
sides. During the passage of the melt, its film
thickness is reduced and its viscosity equalised,
ensuring a high degree of uniformity in all
characteristics of the melt. The melt is then
fed to the spinneret unit via cavity Δ.
5.5.67. as 1151538/28-12, SVIRID, S.A. et al.
Synthetic Yarn Producing Machines Res. Inst.
(20.11.68) Bul. 25/6.8.68. Class 29a, Int. Cl.
D Old.

19761895

AA0043503



AUTHORS: Svirid, S. A.; Semiletov, V. A.; Chernyshov, Yu. A.
Vsesoyuznyy Nauchno - Issledovatel'skiy Institut
Mashin dlya Proizvodstva Sinteticheskikh Volokon

2/2
19761896

USSR

UDC 535.211

BETANELI, A. I., DANILENKO, L. P., LOLADZE, T. N., SEMILETOVA, YE. F.,
ZHIRYAKOV, B. M., and FANNIBO, A. K., Tbilisi, Moscow

"Study of the Possibility of Additional Alloying of R18 Steel Using a Laser"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov-Dec 72, pp 22-26

Abstract: A description is given of experimental results on the introduction of a number of alloying elements (carbon, VK3, VK6, T15K6 mixtures -- standard raw materials for producing solid solutions) into local sections of the surface of R18 high-speed steel with the aid of the quasi-static radiation of a ruby laser. The changes in microstructure and mechanical properties were investigated. Graphs showing the changes in microhardness with depth in the alloyed section according to depth are presented. From X-ray diffraction analyses it was established that the change in lattice parameters in the matrix material occurs as a result of the effect of the alloying elements and the dissolution of carbides in them. The selection of a quasi-continuous mode for local surface alloying proved to be most advantageous because this mode makes it possible to easily control mode parameters and thereby prevent metal failure which would result in the formation of a crater from the laser beam. Three figures, 2 tables, 6 bibliographic references.

1/1

172 011
UNCLASSIFIED
TITLE--NOR, NUCLEAR QUADRUPOLE RESONANCE, SPECTRA OF CHLORINE 35 AND
INFLUENCE OF TRANSMISSION EFFECTS IN A RSD SUB2 CL SERIES -U-
AUTHOR--(03)--SEMIN, G.K., NEYMYSHEVA, A.A., BABUSHKINA, T.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKADE. NAUK SSSR, SER. KHIM. 1970, (2), 486-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--NUCLEAR RESONANCE, SPECTRUM, CHLORINE ISOTOPE, ORGANIC SULFUR
COMPOUND, CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0614
CIRC ACCESSION NO--AP0119526
STEP NO--UR/0062/70/000/002/0486/0488
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRIME35 CL NQR SPECTRA ARE REPORTED FOR RSO SUB2 CL WHERE R WAS: CL, F, CCL SUB3, ME, MED, CH SUB2:CH, CLCH SUB2 CH SUB2, ET, ETO, ME SUB2 N, PR, ISO-PR, 2,THIENYL, BU, ET SUB2 N, C SUB6 F SUB5, NH SUB2, PH, CLCHS UB2, PHO, C SUB6 CL SUB5, (CO) SUB3 MNC SUB5 H SUB4, OR (CO) SUB3 REC SUB5 H SUB4. FROM THE CORRELATION OF THE PRIME35 CL FREQUENCIES WITH THE TAFT SUBSTITUENT CONSTS. IT IS SHOWN THAT THE SUBSTITUENT EFFECTS ARE TRANSMITTED WITH SUCH COMPS. THROUGH SO SUB2 CL GROUP BY ALMOST PURELY INDUCTIVE MECHANISM. FACILITY: INST. ELEMENTORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--NUCLEAR QUADRUPOLE RESONANCE NQR IN A STUDY OF MOLECULAR COMPOUNDS
-U-
AUTHOR--(03)--MAKSYUTIN, YU.K., GURYANOVA, YE.N., SEMIN, G.K.
COUNTRY OF INFO--USSR
SOURCE--USP. KHIM. 1970, 39(4), 727-51
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--QUADRUPOLE MOMENT, NUCLEAR RESONANCE, SPECTROSCOPY, COMPLEX
COMPOUND, ELECTRON ACCEPTOR, HYDROGEN BONDING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--3002/1111 STEP NO--UR/0074/70/039/004/0727/0751
CIRC ACCESSION NO--AP0128538
UNCLASSIFIED

2/2

019

CIRC ACCESSION NO--AP0128538

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0-

1968, COVERING THE GENERAL METHODS OF NQR SPECTROSCOPY, THE NATURE OF
NQR SPECTRA IN COMPLEXES WITH CHARGE TRANSFER CHARACTERISTICS, COMPLEXES
FORMED BY SUBSTANCES WITH DIFFERENT TYPES OF ELECTRON ACCEPTORS, AND THE
H BONDED SUBSTANCES.
MOSCOW, USSR.

FACILITY: INST. ELEMENTOORG. SOEDIN.,

UNCLASSIFIED

172 014
UNCLASSIFIED
TITLE--NMR NUCLEAR QUADRUPOLE RESONANCE SPECTRA OF ARSENIC 75 AND CHLORINE
35 OF CHLORINE CONTAINING ORGANODARSENIC III COMPOUNDS -U-
AUTHOR--(05)-SHVEDOVA, G.N., SVERGUN, V.I., BABUSHKINA, T.A., KUDRYAVTSEVA,
L.V., SENIN, G.K.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 482-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--NUCLEAR RESONANCE, SPECTRUM, ARSENIC ISOTOPE, CHLORINE
ISOTOPE, ORGANIC ARSENIC COMPOUND, MOLECULAR ORBITAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
ROXY REEL/FRA--1997/0648
STEP NO--UR/0062/70/000/002/0482/0483
IRC ACCESSION NO--AP0119560
UNCLASSIFIED

2/2-014

UNCLASSIFIED

PROCESSING DATE--23OCT70

IRC ACCESSION NO--AP0119560

BSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. NOR SPECTRA WERE REPORTED FOR
PRIME75 AS AND PRIME35 CL IN ASCL SUB3, ME SUB3 AS, ET SUB3 AS, PH SUB3
AS, PH SUB2 ASC SUB6 H SUB4 CO SUB2 H P AND M ISOMER, PH SUB2 ASCL,
MEASCL SUB2, ETASCL SUB2, PRASCL SUB2, AND BUASCL SUB2. THE P CHARACTER
OF THE SP HYBRIDIZED UNSHARED ELECTRONS OF AS INCREASES UNDER THE
INFLUENCE OF DIVERSE SUBSTITUENTS ON AS; THIS CORRESPONDS TO INCREASED
ANGLE BETWEEN METAL ORBITALS RELATIVE TO THE VALENCE ANGLE AND DEVIATION
OF THE ORBITAL OCCUPIED BY THE LONE PAIR FROM THE PSEUDOAXIS OF THE 3RD
ORDER.

FACILITY: INST. ELEMENTORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

172 011 UNCLASSIFIED PROCESSING DATE—3006170
TITLE—USE OF CHLORINE-35 NUCLEAR QUADRUPOLE RESONANCE TO STUDY THE
TRANSFER OF INFLUENCE THROUGH AN ESTER BOND.—U—
AUTHOR—(051)—KURSHAK, V.V., VINOGRADOVA, S.V., VASNEV, V.A., SRYUKHOVA,
YE.V., SEMIN, G.K.
COUNTRY OF INFO—USSR
SOURCE—IAV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 681-2
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS—CHLORINE ISOTOPE, NUCLEAR RESONANCE, SPECTUM, ESTER
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—1999/1904 STEP NO—UR/0062/70/000/003/0681/0682
CIRC ACCESSION NO—AP0123688
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--300CT7C

CIRC ACCESSION NO--AP0123688

ABSTRACT/EXTRACT--(U) GP-O-

ABSTRACT. THE N.Q.R. SPECTRAL DATA WERE
TABULATED FOR P--RC SUB6 H SUB4 O SUB2 CC SUB6 H SUB2 CL-P AND P-CLC SUB6
H SUB4 O SUB2 CC SUB6 H SUB4 R-P (R EQUALS NO SUB2, F, CL, MED, H, ME,
AC). TRANSMISSION OF THE ELECTRONIC EFFECTS THROUGH THE ESTER LINK IS
MUCH MORE FACILE IN THE DIRECTION YIELDS O-C(O) THAN IN YIELDS C(O)-O
DIRECTION. FACILITY: INST. ELEMENTDORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

AP9 052906

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 99-103

G. K. Semin, T. A. Babushkina, V. M. Vlasov,
G. G. Yakobson

NUCLEAR QUADRUPOLE RESONANCE IN HALOBENZENES

VI. NQR-Spectra of Cl^{35} in Halogenated Benzenesulfochlorides
and Sulfofluorides

NQR-spectra may be calculated on the bases of the increments obtained from the experimental NQR-spectra. It has been shown that SO_2Cl -group is a stronger acceptor than SO_2F -group. A correlation has been found between the mobility of chlorine atoms in the aromatic nuclei and their frequencies in the NQR-spectra.

1949 1602

1/2 010
UNCLASSIFIED
TITLE--PRIMARY PRODUCTION AS RELATED TO THE HYDROCHEMICAL REGIME OF A SEA
BASIN (EXEMPLIFIED BY THE WHITE SEA) -U-
AUTHOR-(02)-PEDUROV, V.D., SEMIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--OKEALOGIYA, 1970, VOL 10, NR 2, PP 318-331
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--PHYTOPLANKTON, PRODUCTION STATISTIC, SEA WATER, OCEAN BASIN,
CHEMISTRY, CARBON ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1358
CIRC ACCESSION NO--AP0109441
STEP NO--UR/0213/70/010/002/0318/0331
UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0109441
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT. THE RADIOCARBON METHOD WAS USED TO STUDY THE INFLUENCE OF NITRATE AND AMMONIA NITROGEN, PHOSPHORUS, IRON AND SILICON ADDITIONS AT TWO DIFFERENT EXPOSITIONS OF THE PHYTOPLANKTON PRIMARY PRODUCTION OF THE KARELIAN COAST OF THE WHITE SEA. THE METHOD OF PLANNED ADDITIONS USED FOR THE EXPERIMENT DURING THE WHOLE SEASON AND THE ANALYSIS OF THE OBTAINED EQUATIONS OF REGRESSION HAVE MADE POSSIBLE THE ELUCIDATION OF THE EFFECT PRODUCED BY EACH ELEMENT SEPARATELY ON PRIMARY PRODUCTION DEPENDING ON THE CHANGES IN CONCENTRATION RELATIONS BETWEEN OTHER FACTORS. AT THE SAME TIME, THE STUDY OF THE WHOLE COMPLEX OF VARIOUS FACTORS HAS ENABLED THE AUTHORS TO REVEAL A RELATION BETWEEN THE ACTION OF BIOGENOUS ELEMENTS ON THE RADIOCARBON FIXATION AND THE HYDROCHEMICAL REGIME OF THE SEA BASIN OBSERVED AGAINST THE BACKGROUND OF CHANGES IN THE COMPOSITION OF PLANKTON SPECIES DURING A SEASON. THIS RELATION ALLOWS ONE TO PREDICT THE INFLUENCE EXERTED BY CHANGES IN THE CONCENTRATION OF ANY PARTICULAR ELEMENT OVER THE WHOLE EXTENT OF THE REGION OF OTHER INTERACTING FACTORS. THE TRUE INFLUENCE OF ANY FACTOR ON THE NEW FORMATION OF ORGANIC MATTER IN THE SEA BECOMES APPARENT AFTER A CERTAIN TIME INTERVAL NECESSARY FOR ROUSING A RESPONSE IN THE PRODUCING SYSTEM: CHANGES IN PHYTOPLANKTON NUMBERS AND COMPOSITION. FACILITY: MOSKOVSKIY GOSUDARSTVENNYY UNIVERSITET.

UNCLASSIFIED

USSR

UDC 620.193+539.24

SEMIN, YE. G., SKORIKOV, YE. A., BALASHOV, D. V., DOROFYEV, B. YU., KAL'NITSKAYA, E. A., Novocherkassk Polytechnic Institute

"Oxidation Resistance of Fe-Ni-Al-Co-Based Alloys in the Air at 1280°"

Moscow, Zashchita Metallov, Vol 8, No 6, 1972, pp 718-719

Abstract: A study was made of the oxidation resistance of alloys based on Fe-Ni-Al-Co used in the production of permanent magnets in the air at 1280° as a function of the content of the technological additives Co, Ti, Nb, and S. The oxidation products were investigated by x-ray, electron diffraction and metallographic methods using the URS-50IM and the BEIM-1 devices and the MIM-7 microscope. The oxidation of the alloys takes place nonuniformly. The outer layer of the scale is formed of coarse regular crystals elongated perpendicular to the surface. The longer the experiment and the higher the temperature, the larger are the crystals. The inside layer of the scale is formed of small equant grains and is bonded tightly to the metal. The scale becomes thicker when the specimens are held up to 3 hours at 1280°.

The composition of the scales is presented. The oxidation law of the alloys with time is parabolic in the first 10 minutes and then linear, which is connected with continuous destruction of the oxide film. Thus, alloying the

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USSR

SEMIN, YE. G., et al., Zashchita Metallov, Vol 8, No 6, 1972, pp 718-719

Fe-Ni-Al-Co alloys with technological additives has little effect on their corrosion resistance; therefore their thermomagnetic treatment must be carried out in the presence of a protective atmosphere or protective coatings.

2/2

- 12 -

Glass and Ceramics

USSR

UDC 546.45:161.6:16212

SEMIN, YE. G., and KHENTOV, V. YA., Novocherkassk Polytechnical
Institute imeni Sergo Ordzhonikidze

"Study of Infrared Spectra of Beryllium-Containing Glasses"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2213-2214

Abstract: Tempered specimens were produced by a method described in an earlier work. The absorption spectra were measured using an IKS-14 spectrometer in the 1400-600 cm^{-1} range. The specimens were prepared by sedimentation of the upper layer of a suspension of finely ground powder in ethyl alcohol on the surface of a potassium bromide plate. The spectra of glasses not subjected to second heat treatment show a wide diffusion band in the 1600-1300 cm^{-1} area, a result of the disordered structure of beryllium glasses. During the process of heat treatment of the glass at 900°C, significant changes in the spectra occur. The weak bands in the 1300-1100, 1000-820, and 800-720 cm^{-1} area are reinforced. Increasing the heat treatment temperature of beryllium glass to 1140°C causes its decomposition, which is reflected in the band at $\nu = 720 \text{ cm}^{-1}$ (decreasing its intensity), and in the increased intensity of the band at 910 cm^{-1} .

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Glass and Ceramics

USSR

UDC 546.45:161.6:16212

SEMIN, YE. G., and KHENTOV, V. YA., Novocherkassk Polytechnical
Institute imeni Serge Ordzhonikidze

"Study of Infrared Spectra of Beryllium-Containing Glasses"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2213-2214

Abstract: Tempered specimens were produced by a method described in an earlier work. The absorption spectra were measured using an IKS-14 spectrometer in the 1400-600 cm^{-1} range. The specimens were prepared by sedimentation of the upper layer of a suspension of finely ground powder in ethyl alcohol on the surface of a potassium bromide plate. The spectra of glasses not subjected to second heat treatment show a wide diffusion band in the 1600-1300 cm^{-1} area, a result of the disordered structure of beryllium glasses. During the process of heat treatment of the glass at 900°C, significant changes in the spectra occur. The weak bands in the 1300-1100, 1000-820, and 800-720 cm^{-1} area are reinforced. Increasing the heat treatment temperature of beryllium glass to 1140°C causes its decomposition, which is reflected in the band at $\nu = 720 \text{ cm}^{-1}$ (decreasing its intensity), and in the increased intensity of the band at 910 cm^{-1} .

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UNCLASSIFIED
TITLE--PRODUCTS OF THE PHOTOCHEMICAL NITROSATION OF CHLOROCYCLOHEXANE -U-
AUTHOR--(05)--SEMINA, G.N., ZELENSKAYA, L.G., LEVASHOVA, L.A., KUZNETSOVA,
K.YE., STRELISOVA, A.A.
COUNTRY OF INFO--USSR
SOURCE--NEFTEKHIMIYA 1970, 10(1), 103-9
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC OXIME COMPOUND, CHLORINATED ORGANIC COMPOUND,
CYCLOHEXANE, PHOTOCHEMISTRY, NITROSYL CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0904
CIRC ACCESSION NO--AP0124565
STEP NO--UR/0204/70/010/001/0103/0109
UNCLASSIFIED

012
CIRC ACCESSION NO--AP0124565 UNCLASSIFIED PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NOCL AND HCL, 0.3 AND 0.6 L.-MIN,
RESP., WERE BUBBLED INTO 1700 ML CHLOROCYCLOHEXANE AT 25DEGREES USING A
750 W LIGHT; AFTER 8 HR, 240 G HEAVY OIL SEPD., CCNTG. 11.6PERCENT
CHLOROCYCLOHEXANE, 29.4 HCL, AND 55.9 ISOMERIC CHLOROCYCLOHEXANONE
OXIMES. HYDROLYSIS OF AN ALIQUOT WITH 20PERCENT H SUB2 SO SUB4 FOR 30
MIN GAVE 1.9PERCENT CHLOROCYCLOHEXANE, 2.8 CYCLOHEXANONE, 65.0
CHLOROCYCLOHEXANONE, 4.0 CYCLOHEXANONE OXIME, AND 23.4 TAR. THE SOLN.
AFTER 10 HR CONTAINED 3.0PERCENT 1,2 TRANS, 2.0 MIXED 1,3 AND 1,4 TRANS,
0.9 1,2 AND 1,4 CIS, 0.5 1,3 CIS, AND 0.3 1,1,DICHLOROCYCLOHEXANES, AND
0.5 TRICHLOROCYCLOHEXANE. IN THE NITROSATION OF CYCLOHEXANE ADDING
CHLOROCYCLOHEXANE INCREASED THE CONTENT OF CHLOROCYCLOHEXANONE OXIME IN
THE OIL FROM 0.6PERCENT (AT 0.7PERCENT ADDED) TO 4PERCENT (AT 12PERCENT
ADDED). FACILITY: GOS. NAUCH.--ISSLED. PROEKT. INST. AZOT. PROM.
PROD. ORG. SIN., MOSCOW, USSR.

UNCLASSIFIED

1/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PYRIDAZINES. 1. SYNTHESIS AND NUCLEOPHILIC SUBSTITUTION OF 3
CHLOROMETHYLPYRIDAZINE -U-
AUTHOR--(04)--NOVITSKIY, K.YU., SADOVAYA, N.K., KASYANOVA, YE.F., SEMINA,
L.K.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 412-14
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, HETEROCYCLIC NITROGEN COMPOUND, EXCHANGE
REACTION, THIONYL CHLORIDE, AMINE, ORGANIC AZINE COMPOUND
CENTREL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0228 STEP NO--UR/0409/70/000/003/0412/0414
CIRC ACCESSION NO--AP0126011
UNCLASSIFIED

2/3 010
CIRC ACCESSION NO--AP0126011
ABSTRACT/EXTRACT--(U) GP-0-
20 ML ANHYL CHCL SUB3 WAS ADDED A SOLN. OF 12 G I (R EQUALS OH) IN 60 ML
ANHYD. CHCL SUB3 AND THE WHOLE STIRRED 2 HR TO YIELD 81PERCENT I.HCL (R
EQUALS CL) (II.HCL), M. 121-1.5DEGREES (ETOAC). THIS (3.3 G) IN 30 ML
MECH WAS ADDED DROPWISE TO MEONA (FROM 1.84 G NA) IN 30 ML ANHYD. MECH,
AND THE WHOLE STIRRED 30 MIN AT ROOM TEMP. AND REFLUXED 4-5 HR TO YIELD
76PERCENT I (R EQUALS OME), B SUB11 114-15DEGREES, D PRIME20 1.0978 N
PRIME20 SUBD 1.5077; PICRATE M. 87-8DEGREES (AQ. ETOH). SIMILARLY WAS
OBTAINED 55PERCENT I (R EQUALS OET), B SUB7 108-9DEGREES, G PRIME20
1.0543, N PRIME20 SUBD 1.4990; PICRATE M. 103-4DEGREES (AQ. ETOH). TO
AN EMULSION OF C.69 G NA IN 2 ML PHME WAS ADDED DROPWISE AT 45-50DEGREES
3.3 G PHSII, STIRRING CONTINUED 4 HR, II (FROM 3.3G II.HCL) IN PHME
ADDED, AND THE WHOLE HEATED 2 HR ON A BOILING WATER BATH TO YIELD
96PERCENT I (R EQUALS SPH), M. 54-5.5DEGREES (PETROLEUM ETHER); PICRATE
M. 112-13DEGREES (ETCH). A MIXT. OF 2.5 G II.HCL AND 1.2 G (H SUB2
N) SUB2 CS IN 300 ML ANHYD. ME SUB2 CO WAS REFLUXED 10 HR TO YIELD
92PERCENT I (R EQUALS SCI:NH)NH SUB2.2HCL, M. 187-8DEGREES (DECOMPN.)
(HEXANE MECH). THIS (2.5 G) HEATED 1 HR ON A BOILING WATER BATH WITH
SATD. K SUB2 CO SUB3 SOLN. GAVE 94PERCENT I (R EQUALS SH).

UNCLASSIFIED

PROCESSING DATE--20NOV70

UNCLASSIFIED

3/3 010
 CIRC ACCESSION NO--AP0126011 UNCLASSIFIED
 ABSTRACT/EXTRACT--II.HCL AND THE APPROPRIATE AMINE REFLUXED 3 HR IN ETHER,
 C SUB6 H SUB6 OR IN THE AMINE GAVE THE FOLLOWING 1 (R, B.P., MM,
 M.P.--M.P. DIPICRATE, AND PERCENT YIELD GIVEN): NE SUBT2,
 124-5DEGREES-6, MINUS, 145.5-6DEGREES (ETOH), 87; MORPHOLINO,
 130-1DEGREES-1, 56-7DEGREES, 169-70DEGREES (ETOH), 85; 1 PYRROLIDINYL,
 115DEGREES-1.5, 51-2DEGREES, 148-9DEGREES (ETOH), 96. TO A SOLN. OF
 3.25 G NACN IN 5 ML H SUB2 D ON A WATER BATH WAS ADDED 3.3 G II.HCL IN
 20 ML ETCH, AND THE WHOLE REFLUXED 1 HR TO YIELD 46PERCENT 1 (R EQUALS
 CN), M. 90-1DEGREES (C SUB6 H SUB6); HCL SALT M. 132-3DEGREES (ETOAC).
 THIS (1 G) IN 15 ML 10PERCENT HCL HEATED 5 HR AT 60DEGREES GAVE
 100PERCENT 1 (R EQUALS H), M. 191-2DEGREES (ME SUB2 CO).
 FACILITY: MOSK, GOS. UNIV: IM. LOMENOSGVA, MOSCOW, USSR.

UNCLASSIFIED

RM/18-160/5 Nov 72
60

Kon'kov, A. A. and A. V. Vorontsov.
Experimental investigation of infrared
radiation from nitrogen. OIS, v. 32, no.
4, 1972, 655-660.

Infrared radiation from the free-free transitions of electrons
contradictions in the data on the infrared radiation from nitrogen
expand the range of conditions for infrared radiation investigations.

Nitrogen absorption coefficients were measured in the
temperature range of 7000-8500° K, at pressures of 30-75 atm, and
wavelengths of 2-6 μ . The nitrogen was heated by a shock tube, and
nitrogen gas parameters were determined on the basis of the shock-
wave velocity. It is shown that the absorption from the free-free tran-
sition of electrons in nitrogen atom field can be described by the
relationship obtained by Pirov and Chibisov (ZhETF, v. 39, 1960, 1770)
if $\sigma'N = 1.6 \times 10^{-15} \text{ cm}^2$ and $\sigma'N_2 = 2.7 \times 10^{-15} \text{ cm}^2$, where σ' is the electron
elastic scattering cross section.

Andreyev, Yu. P., Ye. V. Gusev, and
I. A. Semlokhin. Equilibrium in nitrogen-
oxygen mixtures at high temperatures.
ZhFKh, v. 46, no. 6, 1430-1432.

Equilibrium in nitrogen-oxygen mixtures within the
temperature range 298 to 20,000° K is considered to evaluate the processes
occurring in these mixtures in a pulse-discharge plasma. The processes
deals with two mixture ratios: $N_2O_2 = 1:1$ (equimolecular mixture), and
 $N_2O_2 = 4:1$ (at). The equilibrium was calculated for pressures which
permit the operation of xenon flashlamps in an admixture of nitrogen and
oxygen (760 torr) or in pure mixtures of nitrogen and oxygen (50 torr).

015
UNCLASSIFIED
PROCESSING DATE--16OCT70
TITLE--RELATION OF SEPARATION AND ENRICHMENT FACTORS DURING ISOTOPE
DISTRIBUTION BETWEEN SEVERAL FRACTIONS -U-
AUTHOR--(02)-KUZNETSOVAYE, YE.M., SEMIOKHIN, I.A.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 3-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--ISOTOPE SEPARATION, CARBON DIOXIDE, FRACTIONATION, PARTICLE
DISTRIBUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1899
CIRC ACCESSION NO--AP0108229
STEP NO--UR/0189/70/011/001/0003/0009
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108229

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE RELATION IS OBTAINED BETWEEN THE COEFFS. OF SINGLE PASS SEPN., ALPHA, AND ENRICHMENT, BETA SUB1, DEPENDING ON THE NO. OF FRACTIONS AND THE DISTRIBUTION OF THE TOTAL AMT. OF MATERIAL AMONG THE FRACTIONS. THE RELATION IS USED TO CALC. ALPHA FOR A COMPLEX PROCESS IN WHICH SEVERAL FRACTIONS ARE FORMED BY SUING THE VALUE OF BETA SUB1 IN THE STARTING MATERIAL AND ITS PERCENTAGE CONVERSION DURING THE REACTION FOR THE DISSOCN. OF CO SUB2.

UNCLASSIFIED

034

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ON THE CAPTURE OF GAS DISSOLVED IN A SOLID BY A MOVING GAS BUBBLE

-U-

AUTHOR--(02)--MIKHLIN, E.YA., SEMIONOV, L.P.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 1, PP 39-42

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SOLUBILITY, GAS DIFFUSION, METAL CONTAINING GAS, GAS STATE,
GAS KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1082

CIRC ACCESSION NO--AP0107591

STEP NO--GE/0030/70/037/001/0039/0042

UNCLASSIFIED

2/2 034

CIRC ACCESSION NO--AP0107591
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30GCT70

ABSTRACT. A SOLUTION IS FOUND OF THE
EQUATION DESCRIBING THE ENTERING OF GAS ATOMS DISSOLVED IN A SOLID INTO
A MOVING GAS BUBBLE. ITS BEHAVIOUR ENABLES ONE TO CONFIRM THE RECENT
ANALYSIS (1) OF CONDITIONS UNDER WHICH THE GAS ENTERING A MOVING BUBBLE
WILL BE ESSENTIALLY DIFFERENT FROM THAT OF AN UNMOVED ONE.
FACILITY: INSTITUTE OF PHYSICS AND POWER ENGINEERING, OBNINSK.

UNCLASSIFIED

USSR

ZAIROV, K. S., ~~SENIOTROCHEV, V. I.~~, CHICHENIN, P. I., MUKHAMEDOV, S. M.,
PULATOV, Ya. G., and LI GVAN KHVA, V. T., Central Asian Scientific Research
Antiplague Institute Ministry of Health Uzbek SSR and Uzbek Antiplague
Station

"Some Problems of the Spread of El Tor Cholera and Its Prophylactic Measures"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 2, 1972, pp 10-14

Abstract: Mild cholera cases and, especially, cholera carriers are not always detected or reported. This is especially true for El Tor cholera, which breaks out in alternating waves, first epidemic, then sporadic. It takes a relatively milder course and is less lethal than ordinary cholera, sometimes resembling a gastrointestinal upset. El Tor vibrios found in water sources in certain areas are lysogenic, in others not. Members of the family and neighborhood of those suffering the disease, particularly preschool children, are often carriers, for a period of about four days after contact. Certain important measures dealing with the sources of infection are suggested: 1) compulsory bacteriological examination of persons arriving from Asian countries 2) Epidemiological examination for cholera for all those suffering gastrointestinal disturbances 3) development and application of effective methods

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USSR

ZAIROV, K. S., et al., Meditsinskiy Zhurnal Uzbekistana, No 2, 1972, pp 10-14
for curing all forms of cholera 4) setting up various types of installations,
ensuring strict sanitary inspection, especially in areas of mass passenger
travel.

2/2

- 14 -

Immunology

USSR

UDC 616.932+616.932-008.97]-078:616.15-097.5

STOGOVA, A. G., SEMIOTROCHEV, V. I., and ZHEGLOVA, D. V., Central Asian
Scientific Research Antiplague Institute, Alma-Ata

"Detection of Agglutinins and Bacteriolysins in the Blood Serum of El Tor
Cholera Patients and Vibrio Carriers"

Moscow, Laboratornoye Delo, No 10, 1970, pp 594-595

Abstract: The agglutination and bacteriolysis tests as modified by Sack and coworkers were used to investigate the sera of two El Tor cholera patients, four vibrio carriers, 62 persons in contact with them, and 40 persons who lived in a cholera-free area. Agglutinins were present in titers ranging from 1:20 to 1:160 in the sera of patients and carriers 3 to 5 days after bacteriological confirmation of the disease. A second examination of their sera 10 days later revealed an increased agglutinin titer in those who had reacted positively before, as well as the appearance of agglutinins after the first negative result. Detection of bacteriolysins in a titer of 1:10,000 during the initial examination in all of the persons from whom the agent was isolated, together with the complete correspondence and increase in titers during the second examination of sera, indicates that

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USSR

STOGOVA, A. G., et al, Laboratornoye Delo, No 10, 1970, pp 594-595

these antibodies appear early. The results of examining the 102 persons who had come into contact with the patients or who lived in a cholera-free area were negative in all cases but one. It is concluded that the agglutination and bacteriolysis reactions are sufficiently specific and sensitive to be used in diagnosing cholera.

2/2

- 39 -

USSR

UDC: 620.172.2

Kozlov, I. A., ~~Semiog-Orlik, V. N.~~ Rybenok, G. V.

"Study of the State of the Structure of Turbine Disc Materials Following Use"
Kiev, Problemy Prochnosti, No 7, 1972, pp 86-90.

Abstract: The state of the structure of turbine disc material is studied following use. It is demonstrated that after extended operation under normal operating conditions, the structure of the material undergoes no significant changes in comparison with its initial structure.

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USSR

UDC 539.4.431.3

SAMGIN, V. A., TROYAN, I. A., SEMIROG-ORLIK, V. N., Kiev

"Influence of Processing Technology on Endurance of OT4-1 Sheet Titanium Alloy"

Problemy Prochnosti, No 11, 1971, pp 48-53.

ABSTRACT: Results are presented from studies of the fatigue strength of ten production runs of specimens of OT4-1 sheet titanium alloy in pure, symmetrical bending. It is established that hydraulic sand blasting creates a hardened surface layer, increasing the total fatigue strength, while etching breaks up the surface and thereby decreases the fatigue characteristics. The remaining eight types of processing (various modes of annealing in a vacuum, in argon and in air) have approximately identical influence on fatigue strength of the alloy studied.

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Materials

USSR

UDC 620.172.2

ZELENYUK, Ye. Ye., KRIVENYUK, V. V., SEMIROG-ORLIK, V. N., (Kiev)

"Deformation and Rupture of Molybdenum Under Creep Conditions"

Kiev, Problemy Prochnosti, No 12, Dec. 1972, pp 85-89.

Abstract: Results are presented from creep and long-term strength tests in a vacuum at temperatures of 1,000-1,800°C, using specimens of technically pure molybdenum with concentrators in the form of apertures, as well as the results of studies of the concentration of deformations in a dangerous cross section near a notch. It is established that the influence of the concentrator on the strength of the material may be qualitatively and quantitatively different, depending on the test conditions; the stress concentration and deformation concentration factors in the elastic area coincide, the latter being independent of the plastic deformation over rather broad limits of deformation.

USSR

UDC 621.314.61 (088.8)

SEMISALOV, Ye. M., SHIRYAYEV, V. I. [NII postoyan. toka--Scientific-Research
Institute of Direct Current]

"Multiphase Generator"

USSR Author's Certificate No 261550, filed 10 May 67, published 25 May 70 (from
RZh--Elektronika i yeye primeneniye, No 4, April 1971. Abstract No 4B670P)

Translation: The invention is a multiphase generator of pulses which are variable in width, for grid control of [semiconductor] rectifiers of a converter device. The generator contains a control unit and charging and discharging thyristors. To increase the stability of operation, the control unit is made in the form of two pulse synchronized shapers, the outputs of which are connected respectively to the inputs of the charging and discharging thyristors.
1 ill. I.R.

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USSR

UDC 621.373.531(088.8)

SEMISALOV, YE. M., SHIRYAYEV, V. I.

"Oscillator"

USSR Author's Certificate No 265260, Filed 28 Jun 68, Published 12 Aug 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G217P)

Translation: An oscillator with series capacitive commutation and regulated pulse width containing transistors in the charge and discharge circuits of the commuting capacitors, a control unit, a power supply, a smoothing reactor in the DC circuit and independent discharge circuits of the commuting capacitors in the form of a series connected transistor, reactor and resistor to which one of the plates of the commuting capacitor is connected, is proposed. In order to improve the reliability, the other plates of the commuting capacitors are connected to each other. Uniform voltage division between the operating and discharge transistors is achieved by including an additional power supply in the discharge circuits. The smoothing reactor in the DC circuit is connected by one terminal to the common point of the commuting capacitors, and the second, to the cathodes of the charge rectifiers. In order to improve stability, an auxiliary circuit containing a thyristor and a 1/2

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SEMISALOV, YE. M., et al., USSR Author's Certificate No 265260, Filed 28 Jun 68, Published 12 Aug 70

capacitor shunted by a resistance is connected in parallel to the discharge circuits, and a smoothing reactor is connected to the common circuit of the discharge thyristors.

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UDC 533.6.013.42

USSR

SEMISHKIN, V. P.

"Oscillations and Stability of Cylindrical Shells in a Liquid Flow"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of Moscow Higher Technical School imeni N. E. Bauman), 1972, No. 152, pp 42-48 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V387)

Translation: An approximate solution is obtained for the problem of oscillations and stability of a system of coaxial cylindrical shells between which an incompressible fluid flows with constant (but different for each gap between the shells) velocities along the generatrices. The shells are assumed to be of constant length so that conditions at the ends do not have an effect on the flow in the channel. Displacements of the shell are approximated (along the generatrices) by beam functions satisfying the appropriate conditions for fastening the ends of the shells. A sample calculation is given for a hinge supported cylindrical shell in a liquid flow in a rigid annular channel (the velocities of the liquid inside the casing and outside are different). The oscillation frequencies of a shell in a rest liquid are

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USSR

SEMISHKIN, V. P., Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana,
1972, No. 152, pp 42-48

determined for a different number of waves in the circular direction and also
critical velocities of divergence. 6 ref. Yu. G. Balakirev.

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USSR

SEMKIN, B. I.

"An Asymptotic Approach to Definition of Measures of Distinction and Quasidistinction in Families of Sets"

Inform. Metody v Sistemakh Upr. Izmereniy i Kontrolya. T. 1 [Information Methods in Testing and Measurement Control Systems. Volume 1 -- Collection of Works], Vladivostok, 1972, pp 208-213 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V409)

Translation: This work introduces the concepts of measures of distinction and similarity. These measures are certain numerical functions defined in a family of sets by axiomatic listing of their properties. Certain examples and applications are presented. A. D'yachkov

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UDC: 666.764.32

USSR

IGNATOVA, T. S., BELYAKOVA, N. P., PERMIKINA, N. M., SEMIKINA, N. V.,
MYAKISHEVA, N. A., and YEVDOKIMOVA, Z. U., Eastern Institute of Refractories

"Effect of Technological Factors on the Density and Microstructure of
Corundum Ceramics Containing 1% Titanium Oxide"

Moscow, Ogneupory, No. 8, 70, pp 32-35

Abstract: This study demonstrates the dependence of the microstructure and the density of corundum ceramics on the method of grinding, the dispersity of the silica, the method of molding, and the annealing temperatures of the finished product. A higher dispersity, vibratory grinding, high annealing temperatures, and TiO_2 additions promote the formation of a macrocrystalline structure, which in turn is responsible for the greater heat resistance of the material. A higher dispersity of the silica increases the intensity of

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USSR

IGNATOVA, T. S., et al, Ogneupory, No 8, 70, pp 32-35

crystallization at high temperatures and initiates recrystallization of corundum at a much lower annealing temperature. Vibratory grinding intensifies recrystallization and the formation of a macrocrystalline structure, which causes loosening of the body and decreases the density. It appears that the higher thermal resistance and lower strength of corundum parts with macrocrystalline structures are related to some increase in apparent porosity.

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UDC 621.382.2

USSR

KASATKIN, A.I., SEMKINA, O.I., NOSOV, YU.P.

"Concerning Statistical Regularity Of Distribution With Respect To Principal Electrical Parameters Of Germanium Diodes With Gold Bonds"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn.pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1972, Issue 4(68), pp 126-130 (from RZh:Elektronika i yeye primeneniye, No 11, Nov 1972, Abstract No 11B169)

Translation: The paper carries out a study and a comparison of the statistical regularities which describe the distribution with respect to the parameters of semiconductors with gold bands, and of point semiconductor diodes. Summary.

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1/2 021
TITLE--THERMAL TREATMENT OF GRINDING TOOLS MADE FROM STEEL KH12M -U-
AUTHOR--SEMKO, A.P. S
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 74-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHROMIUM STEEL, TOOL STEEL, MECHANICAL PROPERTY, METAL HEAT
TREATMENT/(U)KH12M CHROMIUM STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1285 STEP NO--UR/0129/70/000/002/0074/0075
CIRC ACCESSION NO--AP0106066
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70

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CIRC ACCESSION NO--AP0106066

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR A BETTER COMBINATION OF MECH. AND COM. PROPERTIES, THE FOLLOWING HEAT TREATMENT IS RECOMMENDED FOR GRINDING TOOLS MADE OF KH12M STEEL: QUENCH FROM 1075-85DEGREES IN OIL AND ANNEAL IN 2 STAGES AT 500 AND 525DEGREES. AS A RESULT OF THIS TREATMENT ALL OF THE AUSTENITE UNDERGOES TRANSFORMATION AND THE STEELS SHOW A HIGH HARDNESS OF 59-62 R SUBC WITH GOOD HEAT RESISTANCE. THE HEAT TREATMENT WAS TESTED ON CUTTING WHEEL BLADES AND PUNCH PRESSES. STABILITY OF THESE TOOLS INCREASED BY 1-2 TIMES.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

1/2 021

TITLE--PROCESSES FOR INITIATING COLUMN CHARGES OF THE SIMPLEST EXPLOSIVES

-U-

AUTHOR--(06)--DYADECHKIN, N.I., LOSEV, V.G., ZHELTETSKIY, A.YE., BAYDA,

V.I., NAZARCHUK, M.N., SEMKO, G.I.

COUNTRY OF INFO--USSR

SOURCE--GORN. ZH. 1970, 145(3), 36

DATE PUBLISHED-----70

SUBJECT AREAS--ORDNANCE

TOPIC TAGS--AMMONIUM NITRATE, DIESEL FUEL, DETONATION, COMMERCIAL
EXPLOSIVE/(U)AS8 GRANULIT EXPLOSIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0763

STEP NO--UR/0127/70/145/003/0036/0036

CIRC ACCESSION NO--AP0136200

UNCLASSIFIED

272 021 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0136200
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLUMN CHARGES OF IGDANIT (A MIXT. OF 7 L. DIESEL FUEL WITH 100 KG GRANULATED NH SUB4 NO SUB3), GRANULIT AS-8, AND ZERNOGRANULIT (THE COMPN. OF THE LAST TWO EXPLOSIVES IS NOT GIVEN) WERE INITIATED. TO AVOID DUST FORMATION WHEN FILLING THE BLAST HOLES WITH ZERNOGRANULIT, 4PERCENT WATER OR DIESEL FUEL WAS ADDED TO THIS EXPLOSIVE. THE EXPTS. WERE DONE IN MINES UNDERGROUND, IN STEEL PIPES 4-4.5 M TIMES 100 MM DIAM., WITH 2.5-MM WALLS. THE EXPLOSIVES DETONATED WHEN INITIATED BY 2 LINES OF DETONATING CORD PLACED ALONG THE WHOLE LENGTH OF THE CARTRIDGES, OR BY TWO DONOR CHARGES (MIN. WEIGHT OF 0.4 KG EACH), CONNECTED BY TWO LINES OF DETONATING CORD.
FACILITY: KRIVOROZH. GORNORUD. INST., KRIVOI ROG, USSR.

UDC: 681.3

USSR

DOVGYALLO, A. M., NIKITIN, A. I., PLATONOV, B. A., SEMOTYUK, V. P.,
YUSHCHENKO, Ye. L.

"On One Approach to Developing a System of Instruction in Programming
Languages on a Digital Computer Base"

V sb. Primeneniye tsifr. vychisl. mashin dlya obuch. programmir. (Use of
Digital Computers for the Teaching of Programming--collection of works),
Kiev, 1970, pp 25-30 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
TV780)

[No abstract]

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1/2 049 UNCLASSIFIED PROCESSING DATE--04 DEC 70
TITLE--ELECTROPHYSICAL PROPERTIES OF ALKALI METAL METASELENOARSENITES -U-
AUTHOR--(05)-DOVGOSHEY, N.I., NIKOLYUK, V.I., SEMRAD, YE. YE., CHEPUR, D.V.,
GOLOVEY, M.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIS. 1970, 13(3), 138-9
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ACTIVATION ENERGY, IR RADIATION, SEMICONDUCTOR MATERIAL,
PHYSICAL CHEMISTRY PROPERTY, SODIUM COMPOUND, POTASSIUM COMPOUND,
ARSENIDE, SELENIDE, CESIUM COMPOUND, LITHIUM COMPOUND, RUBIDIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1504

STEP NO--UR/0139/70/013/003/0138/000

CIRC ACCESSION NO--AT0130433

UNCLASSIFIED

PROCESSING DATE--04DEC70

UNCLASSIFIED

2/2 049

CIRC ACCESSION NO--AT0130433
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE COND. SIGMA, OF MASSE SUB2, M
EQUALS LI, NA, K, RB, AND CS, WAS DETD. FROM MINUS 50 TO 190DEGREES.

THE ACTIVATION ENERGY OBTAINED FROM LOG SIGMA VS. 1-T CURVES INCREASED
FROM 1.10 FOR LIASSE SUB2 TO 2.00 EV FOR CSASSE SUB2. ALL MASSE SUB2
EXHIBITED A SLIGHT PHOTOSENSITIVITY AT ROOM TEMP. LIASSE SUB2 WAS
SENSITIVE TO IR RADIATION. ALL OTHERS WERE SENSITIVE TO VISIBLE LIGHT.

THE HIGHEST PHOTOSENSITIVITY WAS EXHIBITED BY NA AND K COMPS. THAT OF
NAASSE SUB2 INCREASED SHARPLY AS THE TEMP. DECREASED. ALL MASSE SUB2
COMPS. ARE SEMICONDUCTORS.

FACILITY: UZHGOROD. GOSUNIV.,
UZHGOROD, USSR.

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